

AMENDMENTS TO THE CLAIMS

1. (Amended) Apparatus for exchanging radio signals provided with time markers comprising radio transmission means having a generator to generate a transmission signal, comprising a carrier and a repetitive time marker, reception means having a reception processing circuit for processing a received signal, said received signal comprising a carrier and a repetitive time marker, the radio transmission and reception means transmitting and receiving, respectively, the same carrier frequency signal, and sequencing means to define separate time segments with substantially random successive positions to control the transmission and reception means enabling transmission only during said time segments, and enabling reception outside the segments, whereby the time markers may be processed without any recurrent effect of the transmission signal masking the reception of the received signal.

2. (Original) Apparatus according to Claim 1, wherein the time segments have a random rate, centred around a mean rate.

3. (Previously Presented) Apparatus according to Claim 1, wherein the sequencing means produce time segments, for controlling transmission and reception, to have substantially equivalent respective mean durations.

4. (Original) Apparatus according to Claim 1, wherein the sequencing means are arranged to repetitively define each time segment and its random position in an interval of time.

5. (Previously Presented) Apparatus according to Claim 4, wherein the time interval durations are predetermined whilst the time segments durations are random and less than the time interval durations.

Application No.: 09/422,944

Docket No.: 20198-00052-US

6. (Previously Presented) Apparatus according to Claim 5, wherein the duration of each said time segment is on average equal to approximately one half of that of the time interval.

7. (Amended) Apparatus according to Claim 1, wherein the time marker of said received signal is linked to a pattern which can be discriminated by correlation.

8. (Amended) Apparatus according to Claim 7, wherein the time marker of the said transmission signal is linked to another pattern which can be discriminated by correlation.

9. (Original) Apparatus according to Claim 7, wherein said reception processing circuit is arranged to selectively distinguish by correlation and tracking the pattern linked to the time marker of said received signal and the pattern linked to the time marker of a second received signal.

10. (Previously Presented) Apparatus according to Claim 9, wherein said second received signal corresponds to said transmission signal sent by the device and returned by the source of said received signal, whereby the time difference between the two time markers is obtained compensating for the instantaneous propagation time differences.

11. (Original) Apparatus according to Claim 7, wherein the time marker of each signal is linked in frequency and phase to the carrier of this signal, and in that the reception processing circuit has a pattern tracking by correlation and a phase tracking on the carrier with a prior spectral analysis.

Application No.: 09/422,944

Docket No.: 20198-00052-US

12. (Previously Presented) Apparatus according to Claim 1, wherein said received signal is returned to a source producing said signal.

13. (Original) Apparatus according to Claim 12, wherein the pattern of the returned signal is substantially equal to the pattern of said received signal.

14. (Previously Presented) Apparatus according to Claim 13, wherein the signal generator is able to cooperate with the reception processing circuit in order to generate said signal to be returned which is equivalent to the signal received.

15. (Original) Apparatus according to Claim 14, wherein the time markers of the return signal and of the signal to be sent are linked to distinct patterns, which can be discriminated by correlation.

16. (Previously Presented) Apparatus according to Claim 7, wherein the carrier of each signal generated is modulated according to a chosen pulse shape, whose repletion is defined according to a pattern which can be discriminated by correlation of this signal.

17. (Original) Apparatus according to Claim 16, wherein the carrier is modulated according to a substantially Gaussian pulse shape.

Application No.: 09/422,944

Docket No.: 20198-00052-US

18. (Original) Apparatus according to Claim 16, wherein the pulses are substantially of the same chose duration and with substantially random respective time positions.

19. (Previously Presented) Apparatus according to Claim 18, wherein the positions in time of two successive pulses are separated by a period less than a threshold value, and on average are separated by a period substantially equivalent to one half of said threshold value.

20. (Amended) Apparatus according to ~~one of the preceding claims~~ claim 1, wherein the said carrier frequency is within the gigahertz band.

21. (Amended) Apparatus for the radio transfer of chronometric information comprising:-

(a) a plurality of separated radio stations;

(b) each station having means for transmitting radio signals and means for receiving return signals from another of said radio stations. of the same frequency as said radio signals and having at least one antenna for conveying transmitting the signals from the transmitting means and to for conveying return signals from said another radio station to the receiving means;

(c) wherein said transmitting and receiving means being arranged ~~to~~ of each radio station exchange ~~said~~ signals having a common carrier frequency between said stations; and

(d) said transmitting and receiving means having sequencing means enabled to define separate time segments with successive random positions, and to enable transmission of said transmission signals during said segments and reception of said return signals outside said segments.